Name:

at1113exam: Expand, factor, and solve quadratics (v317)

1. Solve the equation.

$$(4x - 3)(7x + 9) \;=\; 0$$

$x = \frac{3}{4}$ $\qquad$ $x = \frac{-9}{7}$

2. Expand the following expression into standard form.

$$(4x + 3)^2$$

$16x^2 + 12x + 12x + 9$

$16x^2 + 24x + 9$

3. Expand the following expression into standard form.

$$(5x + 6)(7x + 4)$$

$35x^2 + 20x + 42x + 24$

$35x^2 + 62x + 24$

4. Expand the following expression into standard form.

$$(3x - 8)(3x + 8)$$

$9x^2 + 24x - 24x - 64$

$9x^2 - 64$

5. Solve the equation with factoring by grouping.

$$18x^2 + 12x + 15x + 10 \;=\; 0$$

$$(6x + 5)(3x + 2) = 0$$

$$x = \frac{-5}{6} \qquad x = \frac{-2}{3}$$

6. Factor the expression.

$$x^2 - 3x - 54$$

$$(x - 9)(x + 6)$$

7. Solve the equation.

$$10x^2 - 46x + 35 \;=\; 5x^2 - 2x + 3$$

$$5x^2 - 44x + 32 = 0$$

$$(5x - 4)(x - 8) = 0$$

$$x = \frac{4}{5} \qquad x = 8$$

8. Factor the expression.

$$49x^2 - 25$$

$$(7x - 5)(7x + 5)$$